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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/332,338	06/14/1999	GUILLERMO J. ROZAS	TRANS11	2806

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EXAMINER

NGUYEN, DUSTIN

ART UNIT PAPER NUMBER

2154

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/332,338	ROZAS ET AL	
	Examiner	Art Unit	
	Dustin Nguyen	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-52 and 71-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-52 and 71-79 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 37-52, and 71-79 are presented for examination.

Specification

2. Examiner requests Applicants to update status of any related cases as mentioned in the disclosure.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 37-52, 71-79 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 7-12 of U.S. Patent No. 6,513,110 [hereinafter as '110 patent']. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are claiming common subject matter as follow:

Art Unit: 2154

Taking claim 37 as an exemplary claim, the '110 patent contains the subject matter claimed in the instant application. As per claim 37, both applications are claiming common subject matter, as follows:

A method of scheduling and executing instructions comprising:

accessing a sequence of instructions ...;

eliminating said second memory operation ...;

executing said sequence of instructions ...; and

determining

The claims of '110 patent does not specifically state the process steps as disclosed in the claim 37 of instant application but it would have been obvious to a person skill in the art to recognize that the two set of claims are similar because the negative or positive result of the check instruction of patent '110 allows to determine the exception during reordering instructions.

As per independent claims 45, 49, 71 and 79, they are also directed to the same subject matter recited in claim 37 above. Accordingly, they are provisionally rejected under the judicially created doctrine of obviousness-type double patenting.

As per dependent claims 38-44, 46-48, 50-52, 72-74, 76-79, they are depending on rejected claims, they are provisionally rejected under the judicially created doctrine of obviousness-type double patenting.

Response to Arguments

Art Unit: 2154

5. As per remarks, Applicants argued on claim 37 including limitation of “re-executing the sequence of instructions including said second store instruction”. Claim 37 does not include the second store instruction as disclosed in the “emphasis added” section of Applicants’ remark. Claim 37 discloses “re-executing the sequence of instructions including said second memory operation.”

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 37-52 and 71-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sager et al. [US Patent No 5,519,841], in view of Tan et al. [Us Patent No 5,920,710].

8. As per claim 37, Sager discloses the invention substantially as claimed including a method of scheduling and executing instructions comprising:

a) accessing a sequence of instructions [col 5, lines 31-33] comprising:

a first memory operation that involves a first address range [col 48, lines 15-16];

a second memory operation that involves at least a portion of said first address range [col 48, lines 45-46]; and

Art Unit: 2154

third memory operation intervening said first and second memory operations [i.e. reorder] [col 48, lines 18-36], wherein it is not known whether said third memory operation involves an address within said first address range [Abstract], wherein at least one of said first through third memory operations comprises a store operation [col 48, lines 13-22]; and

Sager does not specifically disclose

- b) eliminating said second memory operation from said sequence of instructions;
- c) executing said sequence of instructions with said second memory operation eliminated;
- d) determining, during said executing, if said third memory operation involves an address within said first address range, and if so, raising an exception and re-executing the sequence of instructions including said second memory operation.

Tan discloses

- b) eliminating said second memory operation from said sequence of instructions [i.e. discard or cancel] [col 2, lines 48-52; and col 6, lines 47-50];
- c) executing said sequence of instructions with said second memory operation eliminated [col 7, lines 62-col 8, lines 6];
- d) determining, during said executing, if said third memory operation involves an address within said first address range [col 9, lines 60-63], and if so, raising an exception and re-executing the sequence of instructions including said second memory operation [i.e. recover original] [col 8, lines 61-66; and col 20, lines 1-9].

It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Sager and Tan because the teaching of Tan would allow the system of

Art Unit: 2154

Sager to efficiently identifying the exceptions during instruction reordered to prevent system corruption.

9. As per claim 38, Sager discloses prior to said executing said sequence of instructions, adding information to said third memory operation to allow determination of said first address range [i.e. tagging] [Abstract].

10. As per claim 39, Sager discloses a mask allowing determination of which of a plurality of registers hold protected addresses [col 26, lines 27-52; and col 42, lines 11-14].

11. As per claim 40, Sager discloses determining, during said executing, if said third memory operation involves an address within a range of any of said protected addresses [col 48, lines 24-36].

12. As per claim 41, Sager discloses storing a memory address associated with said first address range in one of said plurality of registers prior to said executing said sequence of instructions [col 2, lines 44-56].

13. As per claim 42, it is rejected for similar reasons as stated above in claim 41.

14. As per claim 43, Sager does not specifically disclose

Art Unit: 2154

said sequence of instructions comprises a fourth memory operation that is in said sequence of instructions after said first memory operation; and

further comprising adding information to said fourth memory operation that allows said fourth memory operation to execute without exception even if said fourth memory operation involves said first address range.

Tan discloses

said sequence of instructions comprises a fourth memory operation that is in said sequence of instructions after said first memory operation [Figure 5; and col 21, lines 15-30]; and

further comprising adding information to said fourth memory operation that allows said fourth memory operation to execute without exception even if said fourth memory operation involves said first address range [i.e. tag] [Abstract; and col 10, lines 29-40].

It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Sager and Tan because Tan's teaching of adding information would allow to reduce delay for identifying a mispredicted instruction, canceling instruction and prioritizing instruction [Tan, col 3, lines 9-14].

15. As per claim 44; Sager discloses first and second memory operations would be safely reducible to a single memory operation if said third memory operation were not intervening [i.e. bypass] [col 33, lines 9-37].

Art Unit: 2154

16. As per claim 45, it is rejected for similar reasons as stated above in claim 37.

Furthermore, Sager discloses load and store instructions [col 31, lines 66-col 32, lines 3].

17. As per claim 46, it is rejected for similar reasons as stated above in claims 39 and 41.

18. As per claim 47, it is rejected for similar reasons as stated above in claim 38.

19. As per claim 48, Sager discloses changing said first load instruction to a load and protect instruction [col 7, lines 30-60].

20. As per claims 49-52, 71-74 and 75-78, they are rejected for similar reasons as stated above in claims 45-48.

21. As per claim 79, it is rejected for similar reasons as stated above in claim 37.

22. Applicant's arguments with respect to claims 37-52 and 71-79 have been considered but are moot in view of the new ground(s) of rejection.

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 2154


MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dustin Nguyen whose telephone number is (703) 305-5321. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Follansbee John can be reached on (703) 305-8498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Dustin Nguyen
Examiner
Art Unit 2154